



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF APPLIED & HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

---

P1

**UNIVERSITY EXAMINATION FOR:**  
*DIPLOMA IN ANALYTICAL CHEMISTRY*  
SEP 2024 J&S FT  
AAB 2105 : BIOLOGY I  
END OF SEMESTER EXAMINATION  
**SERIES: DECEMBER 2024**  
**TIME: 2 HOURS**  
**DATE: Pick Date Dec 2024**

**Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** Question(s). Attempt question ONE (Compulsory) and any other TWO questions.

---

**QUESTION 1**

- I. Describe the process of phagocytosis (6 marks)
- II. Outline the major differences between the light and electron microscope (7 marks)
- III. Describe the types of mutations that could occur due to substitution of a single nucleotide (6 marks)
- IV. Describe the Mendelian law of independent assortment (3 marks)
- V. Define the following terms as used in microscopy .....(4 marks)
  - i. Magnification
  - ii. Resolution
- VI. Define the following terms as used in genetics .....(4 marks)
  - i. Homozygous
  - ii. Heterozygous



TUM is ISO 9001:2015 Certified

## QUESTION 2

- I. With illustration describe the cell cycle (10 marks)
- II. Describe binary fission as occurs in prokaryotic cells (5 marks)

## QUESTION 3

- I. Draw a typical diagram of a prokaryotic cell (10 marks)
- II. What are the components of the cell theory (5 marks)

## QUESTION 4

- I. With illustration describe the DNA structure as describe by Crick and Watson (10 marks)
- II. What are the impacts of mutations to an organism 's survival (5 marks)

## QUESTION 5

- I. Explain the importance of meiosis (10 marks)
- II. What are the main functions of mitosis (5 marks)

